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Noteworthy Lichens Collected by Dr. M. Tagawa and Dr. K. Iwatsuki on the Amami Islands, Japan

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田川・岩槻両博士採集の奄美群島の地衣

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The Amami Islands lie southwest of Yakushima Island in Kyushu, Japan, and northeast of the Ryukyu Islands. They are midway between Kyushu and Okinawa. The lichen flora of Japan is quite well known and that of Formosa is also relatively well known from the publications of Zahlbruckner (1933, 1933a) and Sato (1936, 1936a, 1937, 1938, 1938a). Therefore, it seems desirable to obtain more precise information on lichens of the Amami Islands, so that we can compare it's lichen flora with that of Japan and Formosa.

This article is based on lichens collected by Dr. M. Tagawa and Dr. K. Iwatsuki, both at Kyoto University, on a field trip to the Amami Islands in August 1958. Their lichen collection includes 133 packets, including many crustose lichens belonging to genera which need a complete revision. For this reason only a few lichens will be discussed in this article from a taxonomic or phyto-geographic viewpoint. The original set of specimens is preserved at KYO with duplicates at TNS.

I wish to extress my sincere thanks to Dr. M. Tagawa and Dr. K. Iwatsuki, Kyoto University, who offered me the opportunity to examine their collection. I also wish to express my thanks to Dr. Rolf Santesson, Uppsala University, for the determination of the foliicolous lichens.

1. *Coenogonium boninense Sato* in Journ. Jap. Bot. **10** : 17. 1934

This species resembles *C. subvirescens* Nyl. in the size of algal cells and spores. However, *C. boninense* is peculiar in having stipitate apothecia.

Coenogonium boninense was described by Sato from his own collection on Mt. Sekimon, Hahajima, Bonin Islands. Although it has previously been known only from the type locality, the specimens listed below agree with the holotype (M. Sato, no. 6 in TI) very

well. A specimen collected by M. Tagawa (no. 409) on Yakushima Island is also identical with this species. In 1925 Asahina collected the same plant in Formosa (Asahina, F-374), and Zahlbruckner (1933a, p. 26) identified it as *C. subvirescens*. Therefore, the distributional range of *C. boninense* now includes Formosa, the Amami Islands, and Yakushima Island as well as the Bonin Islands.

Specimens examined (collected on the Amami Islands). Tokunoshima Island : Mt. Tanpatsu-zan, August 21, 1958. Nos. 2711 and 2719. Mt. Inokawa-dake. August 23, 1958. No. 2848.

2. *Coenogonium nigromaculatum* Kurokawa sp. nov.

Thallus byssaceus spongiosusque, ex fibris irregulariter laxeque intricatis et fusco- aut nigro-maculatis formatus, ad corticem arborem laxe adnatus, dilute stramineo aut glauco-olivaceus, ambitu irregulariter incisis, 2-5.5 cm diametro; gonidia ad Trentepohliam pertinentia, cellulis 17-21μ crassis, 44-57μ longis.

Apothecia adnata, rotundata, in latere superiore thalli sita, 0.5-1.3 mm diametro, disco ochraceo aut carneo; paraphyses laxe cohaerentes, ad apicem distincte incrassatae; asci oblongo-clavati, 8-spori, sporis decoloribus, fusiformibus, 1-septatis, 3-4×8-11μ.

Holotype : Mt. Inokawa-dake, Tokunoshima Island. August 23, 1958. M. Tagawa & K. Iwatsuki, no. 2850 (KYO)—isotype in TNS.

This new species resembles *C. linkii* Ehrenb. in size of the algal cells and spores. However, the thallus of C. *linkii* forms a thin rounded membrane which is composed of reticulately inter-tangled filaments while that of *C. nigromaculatum* is composed of irregularly intertangled filaments and does not form a thin membrane.

Coenogonium nigromaculatum has been reported as *C. interplexum* Nyl. by Asahina (1929) from Kyushu in Japan. However, the algal cells of *C. interplexum* (8-12μ wide) are far smaller than those of *C. nigromaculatum* (17-21μ wide).

Coenogonium nigromaculatum and *C. boninense* Sato both occur in southwestern Japan. The thallus of *C. nigromaculatum* spreads irregularly over the substratum and the apothecia are adnate. In contrast, the thallus of *C. boninense* forms a more or less rounded thin membrane and is often imbricate, and the apothecia are distinctly stipitate. In addition, the spores of *C. nigromaculatum* are 1-septate, while those of *C. boninense* are simple.

This species seems to be rather common on the Amami Islands with a range extension northward to southern Kyushu.

Specimens examined (collected on the Amami Islands). Tokunoshima Island : Mt. Amagi-san. August 19, 1958. No. 2610. Mt. Tanpatsu-zan. August 21, 1958. Nos. 2716, 2725, and 2729. Mt. Inokawa-dake. August 23, 1958. Nos. 2786, 2829, and 2831. Amami-Ooshima Island : En route from Mt. Yuwan-dake to Naon. August 29, 1958. No. 3040.

3. *Lopadium puiggarii* (Müll. Arg.) Zahlbr. ; Santesson in Symbol. Bot. Upsaliensis **12** (1) : 535. 1952

This species resembles *L. subcoerulescens* Zahlbr. which was previously known from Japan. Both species have similar muriform spores, and spore sizes agree closely. The disc of *L. puiggarii*, however, is dark to blackish brown, while that of *L. subcoerulescens* is black. Only the basal part of apothecium in *L. puiggarii* is tinged with blue. In contrast, the hypothecium and epithecium of *L. subcoerulescens* are strongly tinged with an aeruginous color, which often spreads inwards to the hymenium. New to Japan.

Specimens examined : Ooyama, Okinoerabu Island. On the leaves of *Cinnamomum japonicum*. August 7, 1958. No. 2373-a. Interior of Tamina, Okinoerabu Island. On the leaves of *Alpinia* sp. August 7, 1958. No. 2392.

4. *Pannaria lepidella* (Räs.) Kurokawa comb. nov.

Syn. *Pannaria fulvescens* var. *lepidella* Räs. in Journ. Jap. Bot. **16** : 145. 1940—Holotype : Tema-mura, Saihaku-gun, Prov. Hoki. November 12, 1913. Yokoo (Yasuda no. 681)(TUR)—isotype (TI).

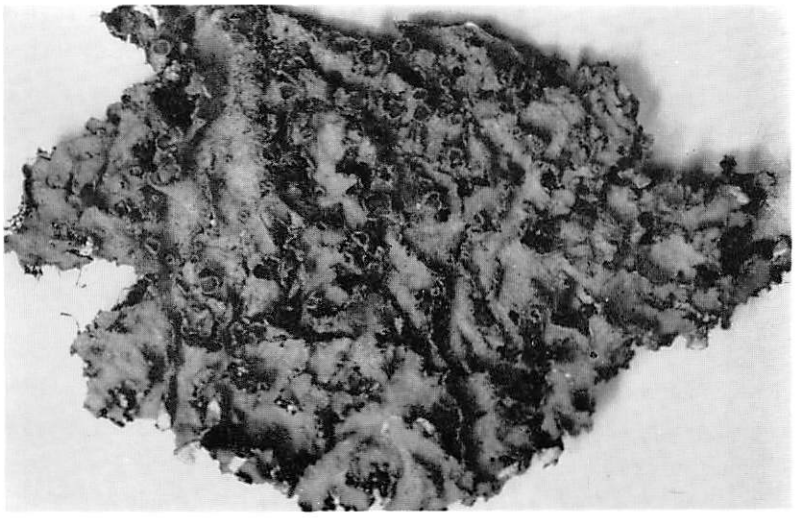

Fig. 1. ***Pannaria lepidella*** **(Räs.) Kurokawa** (×1)

This species was described by Räsänen as a variety of *Pannaria fulvescens* (Mont.) Nyl., which was described by Montagne from Taiti as *Parmelia fulvescens*. The holotype of *Parmelia fulvescens* preserved at PC has soredia along the margin of the lobes, and the lobes are 2-4 mm wide. In contrast, *Pannaria lepidella* is not sorediate at all and the lobes are 3-8 mm, sometimes more than 10 mm wide. *P. lepidella* should, therefore, be considered as a distinct species rather than a variety of *Pannaria fulvescens*.

Yasuda (1925 p. 74) reported the occurence of *P. fulvescens* in Japan. Judging from the illustration (Yasuda, 1925, pl. 16, fig. 3), however, *P. fulvescens* sensu Yasuda should be considered as *P. lepidella*.

Pannaria lepidella seems to be an eastern Asian species, while *P. fulvescens* is widely distributed in tropical regions.

Specimens examined (collected on the Amami Islands). Mt. Tanpatsu-zan, Tokunoshima Island. August 21, 1958. Nos. 2699 and 2710.

5. *Pannaria stylophora* Vain. in Annal. Acad. Sci. Fenn. ser. A, **6** : 102. 1915

Although this species seems to be very rare in Kyushu and Shikoku, it is apparently rather common on the Amami Islands, especially on Tokunoshima Island.

Specimens examined. Tokunoshima Island : Mt. Amagi. August 19, 1958. Nos. 2617, 2619, and 2635. Mt. Tanpatsu-zan. August 21, 1958. Nos. 2693, 2694, and 2713. Mt. Inokawa-dake. August 23, 1958. No. 2842. Amami-Ooshima Island : En route from Mt. Yuwan-dake to Naon. August 29, 1958. No. 3037.

6. *Porina nitidula* Müll. Arg; Santesson in Symbol. Bot. Upsaliensis **12**(1):225. 1952

According to Santesson (1952, p. 225), *Porina nitidula* is apparently a pantropical foliicolous lichen, but it is remarkably rare in Asia, Australia, and Polynesia. Santesson, in fact, cited only one specimen of this species from Asia. This is the second record of *P. nitidula* in Asia and the first in Japan.

This species resembles *P. corruscans* (Rehm) Sant. in producing 5-septate spores. However, the perithecia of *P. nitidula* are more or less constricted at the base and the nucleus is globose, while the perithecia of *P. corruscans* are laterally spreading at the base and the nucleus is lens-shaped to hemisphaerical.

Specimen examined. Ooyama, Okinoerabu Island. On the leaves of *Cinnamomum japonicum*. August 7, 1958. No. 2373-c.

7. *Pyrenula gigas* Zahlbr. in Annal. Mycologici **14** : 46. 1916

This species has been known only from the type locality in Yakushima Island, which is situated northeast of the Amami Islands. It is characterized by large perithecia 3.5-4 mm in diameter. The perithecia seem to be the largest in the genus *Pyrenula*.

Specimen examined. Mt. Tanpatsu-zan, Tokunoshima Island. August 21, 1958. No. 2712.

8. *Sticta sinuosa* Pers. in Gaud. Voy. Uran. Bot. 200. 1826.

This species seems to be one of the typical tropical lichens. While Zahlbruckner (1933a, p. 31) reported the occurrence of this species in Formosa, this is the first record in Japan.

Specimens examined. Amami-Ooshima Island : Mt. Yuwan-dake. August 29, 1958. No. 2991. En route from Mt. Yuwan-dake to Naon. August 29, 1958. No. 3034.

9. *Strigula nitidula* Mont.,Santesson in Symbol. Bot. Upsaliensis **12** (1): 179. 1952

According to Santesson (1952, p. 179), *Strigula nitidula* is a pantropical foliicolous species which has been recorded from Central and South America, the West Indies, southern Asia, Australia, and the Philippines. This is the first record of the species in

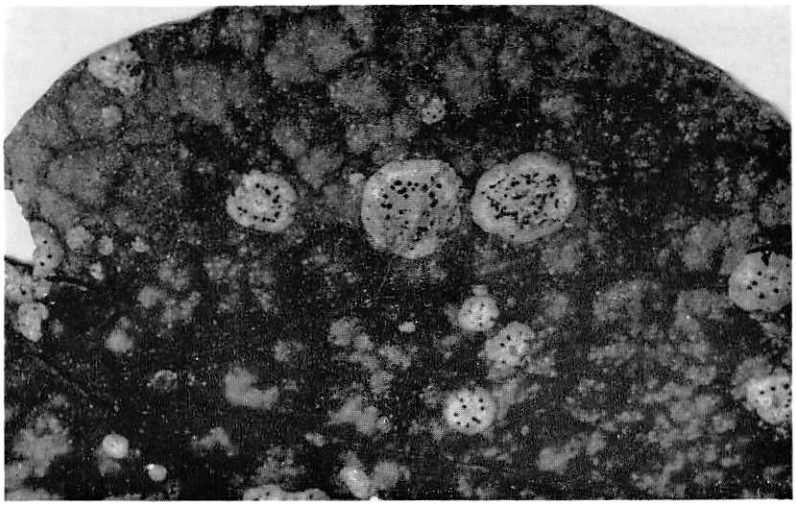

Fig. 2. ***Strigula nitidula*** **Mont.** (×2)

Japan.

Specimen examined. Kamihirakawa, Okinoerabu Island. On the leaves of *Piper kadsura*. August 5, 1958. No. 2362.

10. *Tricharia vainioi* Sant. in Symbol. Bot. Upsaliensis **12** (1) : 382. 1952

Tricharia vainioi resembles *T. urceolata* in having black sterile hairs on the thallus and in producing muriform spores. However, it is different from *T. urceolata* in having non or slightly constricted apothecia. New to Japan.

Specimens examined. Ooyama, Okinoerabu Island. On the leaves of *Cinnamomum japonicum*. August 7, 1958. No. 2373-b.

References

Asahina, Y., 1929, 蕾軒独語 其三十一, Journ. Jap. Bot, **6** : 269—271.

Santesson, R., 1952, Foliicolous lichens I. A revision of the taxonomy of the obligately foliicolous, lichenized fungi. Symbol. Bot. Bot.Upsaliensis, **12** (1) : 1—590.

Sato, M., 1936, Enumeratio Lichenum Ins. Formosae (I), Journ. Jap. Bot; **12** : 426—432.

———, 1936a, ——— (II), *Ibid.*, **12** : 569—575.

———, 1937, ——— (III), *Ibid.*, **13** : 595—599.

———, 1938, ——— (IV), *Ibid.*, **14** : 463—469.

———, 1938a, ——— (V), *Ibid.*, **14** : 783—791.

Yasuda, A., 1925, Flechten Japans. Bull. Saito Ho-on Kai Museum, No. 2, 1—118.

Zahlbruckner, A., 1933, Flechten der Insel Formosa. Fedde Repert, **31** : 194—224.

———, 1933a, ——— *Ibid.*, **33** : 22—68.

要 約

1958年8月，京都大学の田川基二・岩槻邦男両博士が奄美群島へ採集旅行され，その折に133包に及ぶ地衣類標本をも得られた。この採集品のうち興味あるもの10種について報告した。10種のうち新種1，日本新産5種を数え，また新組合せ1を作った。日本新産5種のうち4種は葉上地衣である。